

Sowela Technical Community College

Master Course Outline

Course Name: General Physics I

Course Number: PHYS 2100

Lecture contact hours: 45

Lab contact hours: 0

Semester Contact Hours: 45

Semester Credit Hours: 3

Catalog Description:

Fundamental principles of motion, force, work, energy, temperature, and heat.

Prerequisites: MATH 1100 or 1120 (College Algebra or Precalculus Algebra) and MATH 1110 (Trigonometry)

Co-requisites: None

Required Textbook and Supplies:

College Physics, 7th edition, by Jerry Wilson, Anthony Buffa, and Bo Lou, Addison-Wesley, 2010.

All students must have a scientific calculator.

Student Learning Outcomes:

Upon successful completion of this course, the student will be able to

- Impart an understanding of the basic concepts of physics including motion, force, work, heat, and sound
- Explain and apply these principles to everyday life
- Use scientific reasoning and mathematical applications to solve a variety of problems

Assessment Measures:

Four instructor-designed unit exams	100 pts. each (drop lowest score)
Unit exams include both theoretical concepts and mathematical applications of those concepts.	
In-class activities and homework assignments	100 points
Comprehensive final exam	100 points
Research paper	100 points
Quizzes (focus on application examples)	<u>100 points</u>
Total	700 points

Expanded Course Outline:

Measurement and problem solving
Kinematics: Description of motion
Motion in two dimensions
Force and motion
Work and energy
Linear momentum
Circular motion and equilibrium
Solids and fluids
Temperature and kinetic theory
Heat
Thermodynamics
Vibrations and waves
Sound